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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,070	07/24/2001	Motoyuki Fujimori	U 013566-9	3280

7590  
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26 West 61 Street  
New York, NY 10023

12/05/2002

EXAMINER

SEVER, ANDREW T

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 12/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

A12

**Office Action Summary**

Application No.

09/912,070

Applicant(s)

FUJIMORI, MOTOYUKI

Examiner

Andrew T Sever

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 28 October 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on Oct. 10, 2002 have been approved. **A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.** The correction to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not known what makes a clip “resilient”. Further the specification does not support either a “resilient clip” or even a “clip.” For purposes of a prior art rejection, it will be assumed that a “resilient clip” is a clip that holds a mirror or lens in place.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,3, 6-11, 13, 14, 16, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Furuhata et al. (US 5,951,136.)

Furuhata et al. Teaches in figure 4 an optical system (10) including a light source (8), an optical lens unit (9), electro-optical devices (925R, 925B, 925G) that modulate the color beams in accordance with image information, and a color beam combining optical system (910) that combines the color beams, and a projection lens (6). Optical lens unit (9) contains: a color beam splitting optical system (941, 943, 942, 971, 946) which transmits three color beams to the electro-optical devices (925R, 925B, 925G) that modulate the color beams in accordance with image information.

Further Furuhata teaches in figure 3 that the optical lens unit (9) is enclosed by an inner case which is an integrated box-shaped body as claimed in applicant's claim 2 where the optical components constituting the optical system, both those internal to the optical lens unit and those external, such as the prism and projection lens are attached (as will be described in more detail below), that forms an enclosure (when the projector is assembled, by attaching the optical system (10) to the bottom case (2,4)) with one of the outer cases (2,4.) Furuhata teaches a fan is provided (15) beneath the inner case and above the outer case for cooling the color beam splitting optical system in the inner case. Inherently an opening must be provided in the inner case to allow air flow from the fan to enter the inner case, further figure 3 clearly shows that a grill shape section of the outer case serves to block the opening of the inner case (in order to insure that foreign objects do not pass into the inner case during fan operation.) Figure 1A of Furuhata teaches that outer case consists of two vertically separable outer cases (3 and 4) that are

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separated at a line near to the indicator 3b. With regards to applicant's claim 3, figure 3 of Furuhashi clearly shows that the projection lens (6) is attached to the inner case not the outer case.

With regards to applicant's claims 6, 7, and 8, Furuhashi teaches in column 6 lines 25-36 that the color beam combining optical system is a prism. Column 6 lines 25-36 also teaches that the prism unit (910) and the electro-optical devices (925R, 925B, 925G) are attached to the inner case, specifically via a thick die cast head plate of magnesium or aluminum and is fixed to the light guides 901, and 902, which form the walls of the inner case of the optical lens unit. Further Figure 6 shows that the electro-optical devices which are attached to prism (910) and the prism are arranged in a recessed portion formed adjacent to the projection lens (6) on a top outside of the inner case as is claimed in applicant's claim 7. Figure 7 shows that a fan (15) and its air vent (231) are disposed adjacent to the prism.

With regards to applicant's claims 10, 11, and 13, figure 3 teaches a circuit board (11) and a video board (13) that control the projector, with the video board specifically controlling the electro-optical device. The circuit board (11) and video board (13) are shown to be disposed on the top outside of the inner case adjacent to the outer case to which the inner case is fixed as is claimed by applicant's claims 11 and 13. Although the placement of the cables that electrically connect the electro-optical device to the video board (13) is not explicitly taught by Furuhashi as is claimed by applicant's in applicant's claim 10, it is inherent that a cable that electrically connects the electro-optical device to the video board (13) would be placed such that it is led out from one side of the electro-optical device to the driver board, as any other placement of the cable would be a waste of cable. (See Yamaguchi et al. (US 6,132,049) figure 8 for an example.)

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With regards to applicant's claims 14, 19, and 20, it is inherent that the outer case to which the inner case is fixed has functions of positioning and supporting the optical components and it is inherent that both the inner case and outer cases are constructed of either resin or metal.

With regards to applicant's claim 16, Furuata teaches in column 6 lines 51-67 and figures 2b and 3, that the lamp (8 and thus its housing 802) are placed in a rectangular area formed by the rear end of the power unit (7) and the indent in the optical lens unit (9). Further a lamp-replacement cover (27) is fixed with a screw to the bottom of wall (4a) of the lower case (4), allowing for the lamp to be easily replaced, simply by loosening the screw and removing the cover (27) to expose the light source lamp unit.

With regards to applicant's amended claim 9; resilient clips are well known and an inherent means to hold the mirrors and lens of Furuata. For example, Kurosawa (US 6,345,896) in figure 3 shows several mirrors (971, 943), a lens (10) that make up an optical system. As can be easily discerned resilient clips, which are a well-known and inherent means to hold a mirror and a lens, hold these and although not shown in Furuata, they are inherently present in Furuata.

### ***Claim Rejections - 35 USC § 103***

6. Claims 4, 5, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuata et al. (US 5,951,136) as applied to claims 1,3, 6-11, 13, 14, 16, 19, and 20 above, and further in view of Fujimori (US 5,806,952.)

Furuhata et al. teaches, as is described in more detail above, an optical system including a light source, an optical lens unit, electro-optical devices that modulate the color beams in accordance with image information, and a color beam combining optical system that combines the color beams, and a projection lens. The optical lens unit contains: a color beam splitting optical system which transmits three color beams to the electro-optical devices that modulate the color beams in accordance with image information. Further Furuhata teaches that the optical lens unit is enclosed by an inner case where the optical components constituting the optical system are attached, that forms an enclosure with one of the outer cases. Furuhata teaches that outer case consists of two vertically separable outer cases.

Furuhata, however, does not teach disposing a sheet shaped thermal insulation material between the inner case and outer case that accommodate the color beam splitting optical system. Fujimori (6,952) teaches in figure 2B a projection type display device having an optical lens unit (9) that is enclosed in an inner case much like Furuhata's optical lens unit. Fujimori (6,952) further teaches in column 7 lines 41-63 the use of an insulation panel made of resin to cover the inside walls of the shield case. Fujimori (6,952) further teaches in figures 2A and 2B and placing a fan (790) in a notch in the driver board for cooling the electro-optical devices underneath it. The use of this resin based insulation and the cooling fan, will help prevent the optics inside optical lens unit (9) from distorting due to uneven heating. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to line the outer case of Furuhata with an insulating panel as Fujimori (6,952) teaches and to further reduce the amount of heat impinging on the light valves by placing an exhaust fan in a notch in the driver board for cooling the electro-optical devices underneath it.

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With regards to claim 5, since figure 2B shows optical lens unit (9) as being rectangular, it would be obvious to one of ordinary skill in the art at the time the invention was made to make Fujimori's (6,952) insulating panel sheet shaped, since this would best conform to the lens unit and would also take up the least amount of room, while insulating all of the color beam splitting optical system, that the insulating panel is provided to protect from excessive heat.

7. Claim 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Furuhashi et al. (US 5,951,136) as applied to claims 1, 3, 6-11, 13, 14, 16, 19, and 20 above.

Furuhashi et al. teaches, as is described in more detail above, an optical system including a light source, an optical lens unit, electro-optical devices that modulate the color beams in accordance with image information, and a color beam combining optical system that combines the color beams, and a projection lens. The optical lens unit contains: a color beam splitting optical system which transmits three color beams to the electro-optical devices that modulate the color beams in accordance with image information. Further Furuhashi teaches that the optical lens unit is enclosed by an inner case where the optical components constituting the optical system are attached, that forms an enclosure with one of the outer cases. Furuhashi teaches that outer case consists of two vertically separable outer cases.

Furuhashi, however, does not teach that the inner case and the outer case that accommodates the color beam splitting optical system are fixed with screws to each other. However, the use of screws to attach an inner case to an outer case is well known in the art, and would have been obvious to one of ordinary skill in the art at the time of the invention to use as



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screws allow for easier assembly that minimizes unwanted movements that can plague other methods for attaching an inner case to an outer case such as an adhesive.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuhashi et al. (US 5,951,136) as applied to claims 1, 3, 6-11, 13, 14, 16, 19, and 20 above, and further in view of Kurosawa (US 6,345,896).

Furuhashi et al. teaches, as is described in more detail above, an optical system including a light source, an optical lens unit, electro-optical devices that modulate the color beams in accordance with image information, and a color beam combining optical system that combines the color beams, and a projection lens. The optical lens unit contains: a color beam splitting optical system which transmits three color beams to the electro-optical devices that modulate the color beams in accordance with image information. Further Furuhashi teaches that the optical lens unit is enclosed by an inner case where the optical components constituting the optical system are attached, that forms an enclosure with one of the outer cases. Furuhashi teaches that outer case consists of two vertically separable outer cases.

Furuhashi further teaches, that the lamp is placed in a rectangular area formed by the rear end of the power unit and an indent in the optical lens unit. Further a lamp-replacement cover which applicant calls its housing is fixed with a screw to the bottom of wall of the lower case, allowing for the lamp to be easily replaced, simply by loosening the screw and removing the cover to expose the light source lamp unit. Furuhashi, however, does not teach that the housing is formed of a resin.

Kurosawa in figure 6 teaches a projector (1) that has a lamp unit (8) that is place in a rectangular area (504) formed by the rear end of the power unit and an indent in the optical lens unit. Further a lamp-replacement cover is provided (502), allowing for the lamp to be easily replaced. Kurosawa also teaches in column 8 lines 41-54, that the lamp-replacement cover (502) or housing is made of resin. Kurosawa explains that this keeps the housing from heating up to such an extent as to interfere with handling, when the light needs replacing. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use resin for constructing the housing in order to gain the benefits of resin's heat insulating properties.

9. Claim18 rejected under 35 U.S.C. 103(a) as being unpatentable over Furuhata et al. (US 5,951,136) as applied to claims 1, 3, 6-11, 13, 14, 16, 19, and 20 above, and further in view of Edmonson et al. (US 5,313,234).

Furuhata et al. teaches, as is described in more detail above, an optical system including a light source, an optical lens unit, electro-optical devices that modulate the color beams in accordance with image information, and a color beam combining optical system that combines the color beams, and a projection lens. The optical lens unit contains: a color beam splitting optical system which transmits three color beams to the electro-optical devices that modulate the color beams in accordance with image information. Further Furuhata teaches that the optical lens unit is enclosed by an inner case where the optical components constituting the optical system are attached, that forms an enclosure with one of the outer cases. Furuhata teaches that

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outer case consists of two vertically separable outer cases. Furuhata, however, does not teach that an insulating coating film is applied to the inner case in facing relation to the light source.

Edmonson teaches in figure 5 a projector having a hot compartment (50) and a cold compartment (60). The hot compartment contains the light source (63) while the cold compartment contains the light modulation panel (100) among other things. In column 2 lines 56-68, Edmonson further teaches that these two compartments are separated by thermally insulating interior housing walls (22 and 24), which can be formed from a variety of materials. Since depositing an insulating coating film on a material (such as aluminum) is a well known way to impart thermally insulating properties to an interior housing wall made of such things as aluminum, it would have been obvious to one of ordinary skill in the art at the time the invention was made to thermally insulate a the inner case in a position that has a facing relation to the light source with an insulating coating film, in order to insure that excess heat from what Edmonson calls the "hot compartment" does not reach and affect the optics in what Edmonson calls the "cold compartment" in Furuhata's projector.

#### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1, 3-20 have been considered but are moot in view of the new ground(s) of rejection.

The inclusion in independent claim 1 of the requirement that the projector have a box-shape inner box having an "opening which is then blocked by one of the outer cases" does not restrict the size of the opening. Clearly an opening for passing air from a fan would qualify as an opening of the box shaped inner box. Further as is described in the new grounds of rejection the prior art teaches blocking that opening by a grill that is an

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integral part of the outer case. Therefore the amended matter of claim 1 is not sufficient to overcome the 35 USC 102 rejection based on Furuhashi as is described in paragraph 5 above.

With regards to applicant's arguments against the objection to claim 9; the specification at page 9, line 7 does not refer to resilient members or resilient clips. However examination of figure 4 and specifically part 7, the examiner believes that there is sufficient support for resilient clips, assuming that a resilient clip is any clip or groove shaped device for holding a mirror or a lens. Since it is still not clear, the 35 USC 112 rejection has been repeated.

#### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 703-305-4036. The examiner can normally be reached M-TH 8:30-18:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached at 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

AS  
December 4, 2002

  
RUSSELL ADAMS  
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